

AIR CONDITIONER PAD AND WATER RECYCLING TANK

TECHNICAL FIELD OF THE INVENTION

5 **[0001]** This invention pertains to an air conditioning system, and, more particularly, to a mounting pad for a compressor of an air conditioning system,

BACKGROUND OF THE INVENTION

10 **[0002]** As populations increase, the need for water increases while the water supply remains constant. In many areas where population density is high, potable water is scarce and must be supplied from several miles away, sometimes even hundreds of miles away, to meet the demand for
15 potable water. During the past decade, many areas have experienced drought conditions due to lack of normal rainfall. To cope with the drought, municipalities, counties and even states have imposed restrictions on outdoor water use. Outdoor water use restrictions are typically imposed on
20 an odd-even basis with odd numbered street addresses allowed water use on odd dates and even numbered addresses allowed to water on even dates. In many locations, the hours of outdoor water use are also restricted, typically with outdoor water use banned between the hours of 5:00 am and 10:00 pm. The
25 banned hours are most, if not all, of the daylight hours. The hours of permissible outdoor water use are the hours that many people are asleep. To further conserve water, modern plumbing fixtures are of a water saving construction that use less water per flush or shower.

30 **[0003]** Other efforts to conserve water include landscaping

that is drought tolerant and require less water. Even with special landscaping, outdoor plantings still require water in addition to rainfall to stay lush and green. It is desirable to provide outdoor plants on a regular basis to supplement
35 rainfall without increasing the burden on water supplies.

[0004] A modern dwelling has a frost free refrigerator equipped with a pan to collect and evaporate water that accumulates during normal operation, but especially during the heating cycle used to melt frost or frozen condensate in
40 the refrigerator. Evaporating this water increases humidity in the dwelling. Because humidity in a dwelling sometimes becomes excessive, a dehumidifier is used to remove moisture from the air. The removed moisture is collected in a tub in the dehumidifier or piped into the waste water line of the
45 plumbing system for the dwelling. Increased moisture in the dwelling can increase the work load of the air conditioner to keep the occupants feeling comfortable. The air conditioner also removes moisture from the air and pipes it into the waste line of the plumbing system or pipes it to the outside.
50 In the hot, humid southeast, the condensed moisture can easily amount to ten or more gallons per day for a typical modern home or apartment. When the water is piped outside, the pipe usually follows the same route as the refrigerant line since openings already exist. Unfortunately, the
55 refrigerant line leads to the compressor sitting on a pad outside causing unsightly puddles or soil erosion at the compressor. Soil erosion or spongy soil about the compressor can cause vibration thereby reducing the effectiveness and efficiency of the compressor and air conditioning system
60 which is undesirable.

[0005] On the one hand, we must conserve water, but on the

other hand, we actually produce water and treat it as waste material. Accordingly, it will be appreciated that it would be highly desirable to recover and recycle the produced waste
65 water for outdoor use.

SUMMARY OF THE INVENTION

[0006] The present invention is directed to overcoming one or more of the problems set forth above. Briefly summarized,
70 according to present the invention, mounting pad and water recycling tank for a compressor unit for an air conditioner has a base member with four sidewalls and a lid forming a closed tank. The compressor sits on a flat, level area of the lid. Condensate enters the tank through an inlet in the
75 lid or one of the left and right sidewalls. When activated, a pump forces water out of the tank through an outlet in one of the sidewalls. A drain for the tank is located near the bottom of one of the sidewalls for winterizing.

[0007] The combination mounting pad and tank receives
80 condensate that would ordinarily enter the waste line of a dwelling and be treated as other waste increasing the burden on waste treatment facilities increasing the usage of scarce water instead of conserving it. With the tank, the condensate is never treated as waste and is available for
85 outdoor use thereby reducing the burden on the water supply.

[0008] The combination pad and tank provides a level surface for mounting the compressor. Since a concrete pad is not required, there is no delay in installing the compressor thereby saving labor. With proper leveling, the pad and tank
90 can sit directly on the ground or supported on legs. Using adjustable legs obviates ground preparation.

[0009] The pump can employ a float for activation when the water level reaches a predetermined threshold level and thereby be automatic, or can be operated manually. Also, the
95 pump can be controlled to activate at a certain time which would also prevent overfilling. Overflow holes in the tank can also be used to prevent overfilling.

[0010] These and other aspects, objects, features and advantages of the present invention will be more clearly
100 understood and appreciated from a review of the following detailed description of the preferred embodiments and appended claims, and by reference to the accompanying drawings

105 BRIEF DESCRIPTION OF THE DRAWINGS

[0011] Figure 1 is a perspective view of a preferred embodiment of a pad and water recycling tank for a compressor of an air conditioner according to the present invention.

[0012] Figure 2 is a left end view of a pad and tank
110 similar to that of Figure 8 but illustrating another embodiment.

[0013] Figure 3 is a top view of a pad and tank similar to Figure 1 but illustrating another preferred embodiment.

[0014] Figure 4 is a diagrammatic fragmentary front view
115 of a pad and tank according to Figure 1 or Figure 3 illustrating a pedestal supporting leg.

[0015] Figure 5 is diagrammatic fragmentary front view, similar to Figure 4 but illustrating multiple supporting legs.

120 [0016] Figure 6 is diagrammatic fragmentary front view, similar to Figure 4 but illustrating a serpentine base

member.

125 [0017] Figure 7 is diagrammatic fragmentary front view,
similar to Figure 4 but illustrating a base member with lands
and grooves.

[0018] Figure 8 is perspective view similar to Figure 1
but illustrating a pad and tank for multiple condenser units.

130 [0019] Figure 9 is a left end view of a pad and tank
similar to that of Figure 8 but illustrating another
embodiment.

[0020] Figure 10 is a right end view of a pad and tank
similar to that of Figure 8 but illustrating another
embodiment.

135 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0021] Referring to Figures 1-2, a pad 10 for a compressor
unit 12 for an air conditioner has a base member 14 and a
front sidewall 16 that is attached to base member 14. A rear
sidewall 18 spaced from front sidewall 16 and is attached to
140 base member 14. A left end wall 20 is attached to base
member 14 and to front and rear sidewalls 16, 18. A right
end wall 22 is spaced from left end wall 20 and is attached
to base member 14 and also front and rear sidewalls 16, 18.
A top panel or lid is spaced from base member 14 and is
145 attached to front and rear sidewalls 16, 18, left end wall 20
and right end wall 22 forming a tank. The tank is preferably
constructed of plastic, but metal, fiberglass or other
materials common for tank construction may be used.

[0022] The tank has a water inlet 26 in lid 24 or a water
150 inlet 26' in left end wall 20. The tank also has a water
outlet 28 located on the front sidewall or one of the end

walls, and a drain 52 preferably located on the front
sidewall or one of the end walls. Water outlet 28 is
preferably threaded to accommodate a common garden hose
155 fitting. Vent holes 30 also function as overflow vents to
release stored water and thereby prevent entering water from
backing-up and possibly damaging the dwelling. A removable
panel 32 serves as an access panel for cleaning the tank and
installing a pump 34. Access panel 32 is preferably attached
160 to right end wall 22 but may be attached to lid 24, front
sidewall 16 or left end wall 20. Where the tank is located
several feet away from the dwelling structure, the access
panel can be located in the rear sidewall. As mentioned, a
dwelling may produce up to ten gallons of water per day. A
165 typical pad may measure 24 inches by 24 inches so that a
height of only five inches will provide more than ample
capacity for ten gallons of water.

[0023] Pump 34 is preferably a submersible electric pump
positioned inside the tank for forcing water in the tank out
170 through the outlet 28. Outfitting pump 28 with a float
allows the water level in the tank to trigger operation of
the pump automatically when a predetermined amount of water
is in the tank. A timer could be used to operate the pump at
given time intervals. Of course, a pump could be mounted
175 externally, but that would cause the pump to pull water a
greater distance thereby decreasing its efficiency.

[0024] Referring to Figure 3, a pad for a compressor unit
36 for an air conditioner has a lid 38 with an access panel
40. A gasket may be used to make the access panel weather
180 tight. Attaching access panel 38 to lid 38 not only allows
access from the top, but also a larger tank for additional
water storage. Additionally, the extra length of the tank

provides space for a partition 39 creating a dry compartment for the pump 34'.

185 [0025] Referring now to Figures 4-7, a base member 42 may be supported on a single pedestal 44 or a pair of legs 46 can be used. Legs 46 are preferably adjustable so that very little, if any, ground preparation is required for a level installation. Where the ground is compact but soft, the base
190 member may have a serpentine 48 configuration or be equipped with lands 49 and grooves 50 to anchor the pad and tank to prevent movement.

[0026] Referring to Figure 8, a pad 54 for a plurality of air conditioning compressors has a base member 56 and a front
195 sidewall 58 attached to base member 56. A rear sidewall 60 is spaced from the front sidewall 58 and is attached to base member 56. A left end wall 62 is attached to base member 56 and front sidewall 58 and rear sidewall 60, and a right end wall 64 is spaced from left end wall 62 and is attached to
200 base member 56, front sidewall 58 and rear sidewall 60.

[0027] A lid 66 is spaced above base member 56 and is attached to front sidewall 58, rear sidewall 60, left end wall 62 and right end wall 64 forming a tank with a water inlet 68 and a water outlet 70. The lid 66 has a plurality
205 of horizontal surface areas 72 each adapted to receive and seat a compressor. These surface seating areas may be serrated or embossed to provide a friction surface to prevent the compressor from sliding and may be at the same elevation as the rest of the lid 66 or may be at higher or lower
210 elevations. Adjacent surface areas are separated by a distance sufficient to prevent interfering air flow with an adjacent compressor. For example, a surface area might be 30

inches in length with a 16 inch space before the next surface area. The space can accommodate an access panel 74. A small
215 space on one end can accommodate the water inlet 68. The tank may be constructed of metal or plastic with reinforcing to support the anticipated weight of the compressors and water. Plastic is the preferred material because it does not rust or corrode when exposed to water and humid air.

220 [0028] A pump 76 may be located inside the tank for pumping the collected water out of the tank through the water outlet 70. A panel 77 positioned inside the tank parallel to the end panels 62, 64 forms a dry compartment for the pump 76 obviating the need for a submersible pump. Other panels with
225 openings to permit water flow therethrough can be used in the tank for reinforcing the tank to support the weight of compressors and water. Preferably, water outlet 70 is located in front sidewall 58 below access panel 74 but may be located on right end panel 64. Alternatively, water outlet
230 70' may be located in right end wall 64 (Figure 10). Similarly, water inlet 68' may be located in left end panel 66 (Figure 9). Drain 78 is preferably located in front sidewall 58 below vent 80.

[0029] It can now be appreciated that a mounting pad for a
235 compressor of an air conditioning system has been presented. The pad is configured as a tank with a base member, front and rear sidewalls, left and right end walls, and a top panel. The tank has a water inlet, a water outlet and a drain. The top panel has at least one horizontal area on which the
240 compressor unit sits and an access panel. A pump inside the tank is accessible through the access panel. Condensate enters the tank through the water inlet. The water outlet is threaded to receive a common garden hose. The pump is

activated to pump water out of the tank through the water
245 outlet. Where the pad accommodates multiple compressors, the
tank may contain enough water daily to irrigate a lawn or
landscaping.

[0030] While the invention has been described with
particular reference to the preferred embodiments, it will be
250 understood by those skilled in the art that various changes
may be made and equivalents may be substituted for elements
of the preferred embodiments without departing from
invention. For example, the tank may contain lugs for
anchoring the compressor to the tank and the tank to the
255 ground in areas prone to high wind.

[0031] As is evident from the foregoing description,
certain aspects of the invention are not limited to the
particular details of the examples illustrated, and it is
therefore contemplated that other modifications and
260 applications will occur to those skilled in the art. For
example, while only one pump and one water outlet have been
described, a tank may have multiple pumps and outlets with
each outlet used to irrigate a different landscape zone so
that different landscaping zones can be water thoroughly in
265 sequence. It is accordingly intended that the claims shall
cover all such modifications and applications as do not
depart from the true spirit and scope of the invention.